

## CLAIMS

1. A system for providing a telephony service between an exchange and a telephone said system comprising:

5 an exchange;  
a telephone;  
an electrical transmission line connecting said exchange and said telephone;  
a node inserted in said electrical transmission line, said node defining a first section of said electrical transmission line extending from said exchange to said node, and  
10 a second section of said electrical transmission line extending from said node to said telephone, said exchange, in use, supplying telephony control signals and voiceband signals on to said first section;  
a power supply arranged in operation to supply electrical power on to said second section;  
15 a signal converter arranged in operation to convert telephony control signals supplied by said exchange into modified downstream control signals having a frequency that is different to the frequency of said electrical power;  
said node comprising electrical equipment arranged in operation to draw electrical power supplied by said power supply from said second section.

20 2. A system according to claim 1, wherein said signal converter is further arranged in operation to convert modified upstream control signals into telephony control signals.

25 3. A system according to either claim 1 or claim 2, wherein said node further comprises said signal converter.

4. A system according to any of claims 1 to 3, further comprising:  
a subscriber unit inserted in said second section, said subscriber unit defining a network subsection thereof extending from said node to said subscriber unit, and a  
30 subscriber subsection thereof extending from said subscriber unit to said telephone, said subscriber unit comprising a further signal converter arranged in operation to convert said modified control signals into telephony control signals as supplied by said exchange.

35 5. A system according to claim 4, wherein said further signal converter is further arranged in operation to convert telephony control signals supplied by said telephone into

modified upstream control signals and wherein said signal converter is further arranged in operation to convert modified upstream control signals into telephony control signals as supplied by said telephone.

5 6. A system according to either claim 4 or claim 5, wherein said subscriber unit further comprises said power supply.

7. A system according to claim 3, wherein said node further comprises a bypass transmission line bypassing said signal converter.

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8. A system according to claims 3 or 4, wherein said subscriber unit further comprises a bypass transmission line bypassing said further signal converter.

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9. A system according to any of the preceding claims, wherein said node further comprises a filter arranged in operation to allow said voiceband signals to pass across said node with minimal attenuation but substantially attenuate all other signals.

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10. A system according to any of the preceding claims, wherein said subscriber unit further comprises a filter arranged in operation to allow said voiceband signals to pass across said subscriber unit with minimal attenuation but substantially attenuate all other signals.

11. A system according to any of the preceding claims, wherein said modified control signals have a frequency that is different to the frequency of said voiceband signals.

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12. A node in a telecommunications network, said node interconnecting first and second sections of an electrical transmission line, said electrical transmission line connecting an exchange in said first section to a telephone in said second section and arranged in operation to carry telephony control signals and voiceband signals supplied on to said first section, said node comprising:

electrical equipment arranged in operation to draw electrical power supplied on to said second section;

a signal converter arranged in operation to convert telephony control signals supplied by said exchange into modified downstream control signals having a frequency

that is different to the frequency of said electrical power and modified upstream control signals into telephony control signals.

13. A subscriber unit in a telecommunications network, said subscriber unit  
5 interconnecting first and second sections of an electrical transmission line, said electrical transmission line connecting an exchange in said first section to a telephone in said second section and arranged in operation to carry telephony control signals and voiceband signals supplied on to said first section, said subscriber unit comprising:

10 a power supply arranged in operation to supply electrical power on to said second section;

a signal converter arranged in operation to convert telephony control signals supplied by said telephone into modified upstream control signals having a frequency that is different to the frequency of said electrical power and modified downstream control signals into telephony control signals.

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14. A method of providing a telephony service between an exchange and a telephone, wherein said exchange and said telephone are connected by an electrical transmission line having a node inserted therein, said node defining a first section of said electrical transmission line extending from said exchange to said node, and a second 20 section of said electrical transmission line extending from said node to said telephone, said method comprising the steps:

(i) supplying telephony control signals and voiceband signals from said exchange on to said first section;

(ii) supplying electrical power on to said second section;

25 (iii) converting telephony control signals supplied by said exchange into modified downstream control signals having a frequency that is different to the frequency of said electrical power;

(iv) operating electrical equipment in said node to draw electrical power from said second section.

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